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R E M A R K S

Reconsideration of the present application in view of the amendments and following remarks is respectfully requested. Claims 18-25 were previously canceled. Claims 31 and 45-56 have been canceled without prejudice or disclaimer. Claims 1 and 26 have been amended. Thirty-five claims are pending in the application: Claims 1-17, 26-30, and 32-44.

35 U.S.C. § 102

1. Claims 17 and 55-56 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,408,272 B1 (*White et al.*).

White et al. describe a distributed voice user interface system. The system includes a local device that receives speech input (e.g., a command) issued from a user. The local device performs preliminary processing of the speech input and determines whether it can respond to the command by itself. If not, the local device initiates communication with a remote system for further processing of the speech input.

The Examiner cites Column 6, lines 31-55 of *White et al.* as teaching the elements of claim 17. This section of *White et al.* teaches a local device that has limited voice recognition capabilities, however, is capable of "word spotting" by scanning speech for the occurrence of one or more "keywords". Because the local device has a limited vocabulary (e.g., less than 100 words) it is only capable of responding to relatively simple

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commands, instructions, directions or requests from a user. When the local device does not recognize any of the keywords it sends the speech over a network to a remote device that has more extensive speech recognition capabilities.

In contrast, Applicants' independent claim 17 recites "searching for an attention word based on a first context" and "switching, upon finding the attention word, to a second context (underlining added)." As stated in Applicants' specification at page 10, lines 1-30, the attention word notifies the Natural Language Interface Controller System (NLICS) that following the attention word, a request will arrive. As such, the microphone arrays employed by the NLICS only have to search for the attention word or words within the physical space defined by the microphone arrays. For example, if the attention word is programmed as "Mona", then the user's request becomes "Mona, I wanna watch TV." Furthermore, individual users may have separate attention words specific to that user. For example, within a household, a first user's attention word is "Mona" while a second user's attention word is "Thor". When the NLICS hears the attention word "Mona", the system assumes that the first user is issuing the command, and so the NLICS will load the grammars and acoustic models corresponding to that user (context switching).

M.P.E.P. § 2131 states that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

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It appears the Examiner has equated the "keywords" of *White et al.*, to "searching for an attention word based on a first context including a first set of models, grammars, and lexica," as claimed by Applicant. However, when a "keyword" is found in *White et al.* the local device will perform the command that was received from the user. In contrast, the "attention word", functions, for example, to identify the user, to avoid false detections of requests and to distinguish between regular conversation and background noise. Thus, the "keywords" of *White et al.* are not the same as an "attention word" as recited in claim 17. The "keywords" of *White et al.* represent the entire vocabulary of commands for a local device where the "attention word" of Applicants claim is used to notify the Natural Language Interface Controller System (NLICS) that, for example, following the attention word, a request will arrive. This provides for an efficient voice recognition system. Therefore, *White et al.* does not teach or suggest "searching for an attention word based on a first context including a first set of models, grammars, and lexica."

Furthermore, the remote voice recognition system of *White et al.* is only utilized when the local device does not recognize the command issued by a user. It appears the Examiner has equated sending the recorded voice command to the remote device of *White et al.* for further processing to Applicants' claimed "switching, upon finding the attention word, to a second context." As described, the system of *White et al.* uses the remote device when the command is not understood, not when the

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system does find a "keyword" and is capable of responding to the request or command without utilizing the remote system.

Thus, *White et al.* do not disclose "searching for an attention word based on a first context including a first set of models, grammars, and lexica; and switching, upon finding the attention word, to a second context to search for an open-ended user request, wherein second context includes a second set of models, grammar and lexicons," as is claimed by Applicants. Therefore, *White et al.* do not anticipate Applicants' claim 17 because not each and every element as set forth in the claim is found, either expressly or inherently described, in the teachings of *White et al.* Thus, Applicants respectfully submit the rejection of claim 17 is overcome and request a timely notice of allowance be issued.

While Applicant traverses the rejection of Claims 55-56, these claims have been canceled in order to pursue the timely issuance of the pending claims in the application. Therefore, the rejection is overcome.

35 U.S.C. §103

2. Claims 1-16 and 26-54 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,324,512 B1 (*Junqua et al.*) in view of Hands free Continuous Speech Recognition in Noisy Environment Using a Four Microphone Array (*Giuliani et al.*) further in view of U.S. Patent No. 6,408,272 B1 (*White et al.*).

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Junqua et al. disclose a voice recognition system where users can control a television and/or recorder. The system is used to hold a natural language dialog with users.

Giuliani et al. describe enhancement techniques for speaker-independent continuous speech recognition. Such techniques are used for recognition improvement of cleanly input speech or for speech generated in noisy conditions. These techniques involve acquiring a signal through an array of microphones, compensating for a corresponding time delay, enhancing the acquired signal by a spectrum weighting process, parsing the enhanced signal by means of a digital filter, and matching segments of the parsed signal to various hidden Markov models.

M.P.E.P. § 2143.03 states that "[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art."

Regarding claim 1, Applicant has amended claim 1 to recite "wherein the natural language interface module abstracts each of the plurality of devices into a respective one of the different grammars and a respective one of a plurality of lexica corresponding to each of the plurality of devices." Independent claim 6 recites "wherein the natural language interface abstracts each of the plurality of devices into a respective one of a plurality of grammars and a respective one of a plurality of lexica corresponding to each of the plurality of devices." Thus, the rejection of amended claim 1 will be addressed in view of the Examiner's rejection of claim 6. In rejecting claim 6, the Examiner cites column 2, line 63 through Column 3, line 16

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of *Junqua et al.* in order to show that *Junqua et al.* teaches the above recited element of claim 6.

The section cited by the Examiner states that the system of *Junqua et al.* includes a parser that supplies its output to a unified access controller module. The parser is a goal-oriented parser that has a pre-defined database of grammars stored within it. If the unified access controller does not understand a command, using its dialog manager, the unified access controller prompts the user for additional information. If the response from a user is sufficiently refined to constitute a command, the unified access controller sends a command to the television. This section of *Junqua et al.* teaches having a pre-defined database of grammars and a system that can prompt a user for additional information if a command is not understood. However, this section of *Junqua et al.* does not teach or suggest "wherein the natural language interface abstracts each of the plurality of devices into a respective one of a plurality of grammars and a respective one of a plurality of lexica corresponding to each of the plurality of devices," such as is claimed by Applicant.

As described in Applicant's specification at the paragraph beginning on page 10, line 30 "[o]ne feature that enables the NLICS 102 to function efficiently is that each of the devices 114 coupled to the NLICS 102 are abstracted into a separate device abstraction such that separate grammars and lexicons are stored for each of the devices 114. For example, as the natural language interface module determines that the request is for the DVD player, a grammar and lexicon specific to

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that particular context...is used to aid in the processing of arriving acoustic data within the speech recognition module." *Junqua et al.* does not teach or suggest a system with increased efficiency having a natural language interface module that "abstracts each of the plurality of devices into a respective one of a plurality of grammars and a respective one of a plurality of lexica corresponding to each of the plurality of devices," such as is claimed by Applicant.

Further, Applicant submits that neither *Giuliani et al.* nor *White et al.* teach or suggest a system "wherein the natural language interface abstracts each of the plurality of devices into a respective one of a plurality of grammars and a respective one of a plurality of lexica corresponding to each of the plurality of devices," such as is claimed by Applicant. Thus, not establish *prima facie* obviousness of a claimed invention because not all the claim limitations are taught or suggested by the cited prior art," as required by M.P.E.P. § 2143.03.

Therefore, *Junqua et al.*, *Giuliani et al.*, and *White et al.* do not, individually or in combination, teach or suggest all of the claim limitations of claims 1 and 6. Thus, Applicant respectfully submits the rejection of claims 1 and 6 is overcome and request a timely notice of allowance be issued. Applicant further submits that claims 2-5 and 11-15 are also in condition for allowance at least because of their dependency upon allowable claim 1.

Independent claims 7 and 8 recite "wherein the natural language interface module searches for the non-prompted, open-

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ended, natural language requests upon the receipt and recognition of an attention word" and "wherein the natural language interface module context switches grammars, acoustic models, and lexica upon receipt and recognition of an attention word," respectively. The Examiner has cited various sections of *White et al.* and it appears the Examiner is equating the "word spotting" and "keywords" of *White et al.* to Applicant's claimed "attention word." As described above with reference to the rejection under section 102, *White et al.* does not teach or suggest an "attention word" as claimed by Applicant. Specifically, *White et al.* does not switch grammars, acoustic models, and lexica upon receipt of a keyword, but performs a command upon recognition of a keyword.

Additionally, *White et al.* does not teach or suggest searching for a natural language request upon receipt of a keyword. If a keyword is recognized, a command is executed, the system of *White et al.* does not search "for the non-prompted, open-ended, natural language requests upon the receipt and recognition of an attention word," such as is claimed by Applicant. The system of *White et al.* is designed to recognize speech only at an elementary level, for example, by keyword searching. For this purpose, the speech recognition engine may comprise a keyword search component which is able to identify and recognize a limited number of keywords (See *White et al.* column 12, lines 14-17).

Thus, *White et al.* does not teach or suggest a system "wherein the natural language interface module searches for the non-prompted, open-ended, natural language requests upon the

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receipt and recognition of an attention word" or a system "wherein the natural language interface module context switches grammars, acoustic models, and lexica upon receipt and recognition of an attention word," as is claimed by Applicant. Applicant further submits that neither *Junqua et al.* nor *Giuliani et al.* teach the claimed limitations.

Therefore, *Junqua et al.*, *Giuliani et al.*, and *White et al.* do not, individually or in combination, teach or suggest all of the claim limitations of claims 7 and 8. Thus, Applicant respectfully submits the rejection of claims 7 and 8 is overcome and request a timely notice of allowance be issued.

Independent claim 9 recites "a grammar module for storing different grammars for each of the plurality of devices." Independent claim 10 recites "an acoustic model module for storing different acoustic models for each of the plurality of devices." As described above with reference to the rejection of claims 1 and 6, *Junqua et al.* does not teach or suggest having different grammars or models for separate devices under control of the natural language interface control system. Having different models or grammars provides for an efficient speech recognition system that is able to context switch between grammars and models that are for each of the plurality of devices controlled by the system. Thus, Applicant respectfully submits the rejection is overcome and claims 9 and 10 are in condition for allowance.

Claim 26 has been amended to recite "wherein the natural language interface abstracts each of the plurality of devices into a respective one of a plurality of grammars and a

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respective one of a plurality of lexica corresponding to each of the plurality of devices." Therefore, for the same reasons as stated above with reference to claims 1 and 6, claim 26 is in condition for allowance. Applicant respectfully submits that claims 27-30 and 32-44 are in condition for allowance at least because of their dependency upon allowable claim 26.

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C O N C L U S I O N

In view of the above, Applicants submit that the pending claims are in condition for allowance, and prompt and favorable action is earnestly solicited. Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain any outstanding issues that require adverse action, it is respectfully requested that the Examiner telephone Thomas F. Lebens at (805) 541-2800 so that such issues may be resolved as expeditiously as possible.

Respectfully submitted,



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Dated: April 12, 2005

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